SYSTEMS AND METHODS OF MANUFACTURING INTEGRATED PHOTONIC CIRCUIT DEVICES

ABSTRACT OF THE DISCLOSURE

The systems and methods of the present invention includes the manufacturing of integrated photonic circuit devices using deposition processes such as, for example, supercritical fluid deposition (SFD). The present invention further includes the coupling of photonic crystal structures and planar waveguides to provide high performance, low-cost and scalable photonic components.

Preferred embodiments of the methods in accordance with the present invention produce high quality metal, metal dioxide, polymers, semiconductor and metal alloy deposits of precisely tailored composition in the form of thin films, conformal coatings on topologically complex surfaces, uniform deposits within high aspect ratio features, and both continuous and discrete deposits within microporous supports.